

**6. Regulation of Heating Oil Facilities Used for Consumption on the Premises or by the Owner or Operator**

**A. Applicability**

- (1) This section applies to all underground heating oil or process oil storage facilities used for consumption on the premises or by the owner or operator of the facility.
- (2) This section does not apply to motor fuel, marketing, distribution facilities, waste oil facilities, field constructed tanks or heavy oil facilities except where specifically stated otherwise.

**B. Design and installation requirements for new and replacement facilities**

**(1) General design requirements**

- (a) The installation of new or replacement tanks and piping constructed of bare steel or asphalt coated steel is prohibited.
- (b) All new and replacement tanks must be constructed of fiberglass reinforced plastic (hereafter referred to as fiberglass), cathodically protected steel, or other noncorrosive material approved by the commissioner. Piping and other below ground ancillary equipment in contact with soil or water must be constructed of fiberglass, cathodically protected steel or other equally noncorrosive materials approved by the commissioner.
  - (i) It is the responsibility of the facility owner to demonstrate to the satisfaction of the commissioner that the materials are noncorrosive and meet or exceed the required performance standards listed below in this paragraph.
  - (ii) All new or replacement facilities must be listed and constructed in accordance with the standards contained in the following:

Steel tanks - Underwriters Laboratories 58 and 1746;

Fiberglass Tanks - Underwriters Laboratories 1316;

Cathodically Protected Tanks and Piping - National Association of Corrosion Engineers RP-0285-2002 and RP 0169-2002; Steel Tank Institute (STI) Tank Standard R892-91; or Petroleum Equipment Institute RP-100-20005.

Composite Tanks -UL 1746 or Steel Tank Institute (STI) Composite Tank Standard (F894-02);

Fiberglass, Flexible or other Non-metallic Piping - Underwriters Laboratories of Canada ~~Guide CAN/ULC-107.7~~ ULC/ORD-C971-2005; or Underwriters Laboratories ~~Subject Standard 971~~ as revised through March 2, 2006;

Pipe Connectors - Underwriters Laboratories Standards 567;

Flexible Connectors - Underwriters Laboratories of Canada Standard CAN 4-S633; and

Steel Piping - National Fire Protection Association Standards 30 or 31, American Petroleum Institute Publication 1632, or National Association of Corrosion Engineers Standard RP-0169-2002.

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NOTE: Fiberglass clad steel and other steel composite tanks need not be provided with galvanic or impressed current cathodic protection if designed and constructed with secondary containment and interstitial space monitoring in accordance with standards of this subsection.

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- (iii) Impressed current cathodic protection systems shall be designed by a corrosion expert and according to standards described in the National Corrosion Engineers Recommended Practice 0285-2002 and RP 0169-2002, and installed under the supervision of a corrosion expert. Other portions of the facility may be installed by a Maine certified installer without such supervision.
- (c) Used or previously installed fiberglass or cathodically protected tanks may not be re-installed unless the owner has supplied the commissioner with satisfactory documentation that the manufacturer will warranty the tanks against internal and external corrosion and structural failure, for a period of at least 10 years, after which the tanks must be properly abandoned in accordance with section 11 of this rule. Re-installation of a tank requires an amendment of the facility registration in accordance with section 4(M) of this rule. The warranty documentation shall accompany the submission of the registration amendment. Used piping may not be reinstalled.
- (d) All facility construction materials must be chemically and physically compatible with the product to be stored.
- (2) Leak detection. All new and replacement facilities must be provided with secondary containment for all facility components routinely containing product, including tanks, product piping (including supply and return lines)

and below ground ancillary equipment. New and replacement tanks and product piping must have continuous interstitial space monitoring. Interstitial space monitoring for heating oil facilities must be able to detect a loss or gain in the interstitial space from a leak in primary or secondary containment structure of 150 gallons or more within 30 days of a leak or discharge. Leak detection probes are to be installed at the lowest point of each leak monitoring location. For facilities with a secondary containment within the tank or piping excavation; the secondary containment system must be designed in accordance with Appendix O.

- (3) Overfill and spill prevention equipment. New and replacement tanks with a capacity in excess of 1,100 gallons must have the following spill and overfill prevention equipment:
  - (a) A liquid tight spill catchment basin, sealed around each tank fill pipe and having a minimum capacity of 15 gallons to collect spillage during product delivery; and
  - (b) Overfill prevention equipment that will automatically shut off flow into the tank when the tank is no more than 95 percent full, or alert the transfer operator when the tank is no more than 90 percent full by restricting flow into the tank or triggering a high-level audible alarm.
  - (c) The use of vent float valves is prohibited on a tank that will receive pressurized oil deliveries because of the danger of rupturing the tank or overfilling the fill pipe.
- (4) General installation requirements for new and replacement facilities
  - (a) No underground oil storage facility or tank may be installed unless the facility has been registered in accordance with section 4 of this rule.
  - (b) No person may install an underground oil storage facility or a portion thereof unless that person is a properly certified underground oil storage tank installer with the appropriate class of certification in accordance with 32 M.R.S.A., sections 10001-10015, and has paid the required certification fee.
  - (c) A certified underground oil storage tank installer may not install an underground storage tank if the installer has been placed on inactive status or if the installer's certification has been suspended or revoked under 32 M.R.S.A., section 10015, and has not been reinstated.

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**NOTE:** No person may connect an underground storage tank used to store heating oil to a boiler or furnace unless that person is a master oil technician or a journeyman working under the supervision of a master oil technician licensed by the Oil and Solid Fuel Board under 32 M.R.S.A., section 2311 et seq., and rules administered by the Oil and Solid Fuel Board.

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- (d) If a tank is replaced, all associated underground piping not meeting the design requirements of this rule must be replaced. Any replacement piping must be designed and installed in accordance with this rule. If product piping is replaced and structural damage to the associated tank has occurred, impairing its physical integrity, the associated tank must also be replaced if not constructed of fiberglass, cathodically protected steel, or other noncorrosive materials approved by the commissioner. Repairs of damaged fiberglass, cathodically protected steel, and other commissioner approved noncorrosive material tanks may only be made if conducted in accordance with sections 5(D)(16) or (17). Tanks that cannot be repaired must be abandoned in accordance with section 11.
- (e) An accurate structure to soil potential measurement must be performed by a certified tank installer or a certified cathodic protection tester in accordance with Appendix A upon installation of all galvanic cathodic protection systems.
- (f) All phases of the installation of an impressed current cathodic protection system must be supervised on-site by a corrosion expert. The tank, piping and other portions of the facility other than the impressed current system may be installed by a Maine certified underground oil storage tank installer without such supervision.
- (g) No underground oil storage tank or piping may be installed within 1 foot of the bedrock surface.
- (h) Leak detection and overfill/spill prevention alarms and shutoff equipment must be installed and operational prior to the start of the facility's operation and in accordance with manufacturer specifications, including proper calibration of electronic equipment.
- (i) Certification of installation. Owners of new and replacement facilities shall ensure that the installers certify to the commissioner, within 30 days of completion of installation, that the facility materials, design and installation comply with the requirements of this rule. This certification must be provided in writing on a form provided by the commissioner.

**(5) Installation requirements for new and replacement tanks.**

(a) All tanks must be installed in conformance with the requirements of Appendix D.

(b) All tanks must be installed in accordance with the manufacturer's instructions.

**(6) Installation requirements for new and replacement piping.**

(a) All underground piping in contact with soil or water must be installed in conformance with Appendix E; except that pressurized airport aviation fuel hydrant piping must also be installed in accordance with section 10.

(b) All underground piping in contact with soil or water must be constructed of fiberglass, cathodically protected steel or other noncorrosive materials approved by the commissioner.

(i) For #1 and #2 heating oil facilities, copper piping meeting the requirements of National Fire Protection Association Code 31, Installation of Oil Burning Equipment, may be used for supply and return lines. All connections between a cathodically protected steel tank and the copper piping must incorporate dielectric fittings that electrically isolate the tanks from the piping.

(ii) Schedule 40 PVC (polyvinyl chloride) piping may be used for secondary containment for #2 heating oil facilities if it is at least twice the diameter of the internal piping.

(iii) When installing copper piping inside fiberglass, PVC or other piping to provide secondary containment, supply and return lines must be provided with spacers to separate the lines and prevent wear due to vibration and friction.

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NOTE: Primary pipe spacers can be provided by using 6-inch lengths of 1/4 inch thick polyethylene foam tubing insulation placed every 10 feet of pipe.

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(iv) It is the responsibility of the facility owner to demonstrate to the satisfaction of the commissioner the materials are noncorrosive.

(v) All new or replacement non-metallic piping must be listed by Underwriters Laboratories and installed in accordance with manufacturer instructions. Cathodically protected piping must be constructed and installed in conformance with the National Association of Corrosion Engineers, Recommended Practices,

Publication No. 0285-95, or Steel Tank Institute (STI) Standard RP 892-89.

- (vi) Secondary containment and cathodic protection of vertical, direct drop fill pipes is not required if the fill pipe is constructed of Schedule 40 steel and is uniformly coated with a minimum of 1/8 inch of fiberglass resin, bitumastic coating or epoxy coating. The pipe surface must be properly prepared and the coating allowed to cure. Offset fill pipes require secondary containment and interstitial space monitoring. Where secondary containment with interstitial space monitoring is not technically feasible, another leak detection system may be used upon prior approval of the commissioner.

**C. Operation, maintenance, testing and inspection requirements for new, replacement and existing facilities**

- (1) The owner or operator shall report any evidence of a possible leak, as defined in section 5(D)(11) of this rule, or other evidence of a discharge to the commissioner within 24 hours of discovery. A certified underground tank installer, inspector or remover finding evidence of a possible leak or oil discharge must report it to the facility owner or operator, and the commissioner, as soon as possible, but no later than within 24 hours of discovery. Notwithstanding the above, discharges of 10 or less gallons of oil that occur on the premises and above the surface of the ground onto a concrete or asphalt paved surface, and that do not reach ground water or surface waters of the State need not be reported to the commissioner if the owner or operator complies with all of the following requirements:
- (a) The discharge is cleaned up within 24 hours of discovery.
  - (b) A written log is maintained at the facility or the owner's place of business recording for each discharge the date of discovery, its source, the general location of the discharge on the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.
  - (c) The log is readily available for inspection upon request by personnel and authorized agents of the commissioner within 24 hours.

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NOTE: To report a leak or discharge at any time 24 hours a day, seven (7) days a week call 1-800-482-0777.

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- (2) If a facility has a cathodic protection system, it must be operated, monitored and maintained in accordance with section 5(D)(4) or (D)(5) of this rule.

- (3) For existing facilities with ground water monitoring wells for leak detection, the monitoring wells must be sampled weekly and the results must be recorded in a log book in the same manner as required under section 5(D)(14).
  - (4) The owner or operator of an existing facility with leak detection equipment other than ground water monitoring wells, shall test for leaks monthly and maintain a log at the facility, including the date, the presence or absence of evidence of a leak or discharge and the name of the individual conducting the test.
  - (5) Continuous interstitial space or other continuous leak detection monitoring equipment must be maintained in accordance with section 5(D) of this rule.
  - (6) The owner or operator shall operate and maintain the spill prevention and overfill prevention equipment to ensure it is operating properly at all times in accordance with the requirements of section 5(D) of this rule.
  - (7) The owner or operator shall operate and maintain the cathodic protection systems in accordance with the requirements of section 5(D) of this rule.
  - (8) Bare or asphalt coated steel tank or piping may not be structurally repaired for use as part of an underground oil storage facility.
  - (9) Tanks only may be relined in accordance with section 5(D)(16) of this rule. Other facility repairs to tanks, and piping other than relining must be conducted in accordance with section 5(D)(17).
  - (10) Oil product may not be stored in a facility of a design or construction with which it is not chemically or physically compatible.
  - (11) The owner shall conduct an annual facility compliance inspection, correcting any deficiencies found, in accordance with section 5(D)(20) of this rule.
  - (12) Maintenance of records. All facility records and logs required by this rule must be maintained and available in accordance with section 5(D)(19).
- D. Facility closure and abandonment.** Closure, abandonment, or temporary discontinuance of service of a facility or any part thereof must be in accordance with section 11 of this rule.

**7. Regulation of Facilities for the Underground Storage of Waste Oil****A. Applicability**

These rules apply to any person, except a waste oil dealer, who stores or proposes to store waste oil in underground tanks. Waste oil dealers are subject to Chapter 860, the department Waste Oil Management Rules.

**B. Design and installation standards for new and replacement facilities**

- (1) All tanks and associated piping used for the underground storage of waste oil must be registered in accordance with section 4 of this rule.
- (2) The installation of new and replacement tanks constructed of bare steel or asphalt coated steel is prohibited.
- (3) All new and replacement tanks must be installed by a Class 2 underground oil storage tank installer who has been properly certified pursuant to 32 M.R.S.A., sections 10001-10015.
- (4) New and replacement waste oil tanks, associated piping and other facility components routinely containing oil must be equipped with secondary containment with continuous interstitial space monitoring, designed and installed in accordance with section 5(B) except as provided below.
- (5) Piping for a new or replacement waste oil facility supplying a waste oil furnace or boiler may not use PVC piping for secondary containment but instead must be constructed of fiberglass, cathodically protected steel or other noncorrosive materials approved by the commissioner.
- (6) Fill and removal pipes at new and replacement facilities must be installed with a spill overfill collection box with a capacity of at least 3 gallons with a liquid tight seal around the fill pipe that will collect spillage during product delivery.
- (7) In addition to the siting restrictions in section 3-A of this rule or 38 M.R.S.A., subsection 563-C, new and replacement underground waste oil facilities may not be located in the following areas:
  - (a) Beneath a building or other permanent structure; or
  - (b) Within 25 feet of a classified body of surface water.
- (8) No used or previously installed fiberglass, cathodically protected steel, or other tank meeting section 5(B) of this rule may be re-installed unless the owner has provided the commissioner with satisfactory documentation that the manufacturer will warrant the tank or piping against internal and

external corrosion and structural failure for a period of at least 10 years, after which the tank or piping must be properly abandoned in accordance with the requirements of section 11 of this rule. Re-installation of a tank or piping requires an amendment of the facility registration in accordance with section 4(M) of this rule. The warranty documentation shall accompany the submission of the registration amendment. Used piping may not be re-installed.

- (9) **Certification of proper installation.** Owners of new and replacement facilities shall ensure that the installer(s) provides certification to the commissioner within 30 days of completion of installation; that the facility's materials, design and installation are in compliance with the requirements of this rule. This certification must be provided in writing on a form provided by the commissioner.

**C. Retrofitting requirements for existing facilities.** Existing waste oil facilities constructed of fiberglass, cathodically protected steel, or other equally noncorrosive materials approved by the commissioner, but without secondary containment and continuous interstitial space monitoring pursuant to subsection B(4) above, must provide by December 22, 1998, leak detection and overfill and spill prevention in accordance with the requirements of section 5(C) of this rule.

**D. Operation, maintenance, testing and inspection requirements for existing, new and replacement facilities**

- (1) All cathodically protected steel tanks, piping and other ancillary equipment must be operated, and maintained in accordance with section 5(D)(4) or (D)(5), and Appendix A of this rule.
- (2) Leak detection and overfill and spill prevention systems must be operated and maintained in accordance with the requirements of section 5(D) of this rule.
- (3) The owner or operator shall report to the commissioner any evidence of a possible leak, as defined in section 5(D)(11), or discharge of oil. The report must be made promptly upon discovery and under no circumstances more than 24 hours from the time of discovery of the possible leak or discharge. A certified underground tank installer, inspector or remover finding evidence of a leak or oil discharge must report it to the facility owner or operator, and the commissioner, as soon as possible, but no later than within 24 hours of discovery. Notwithstanding the above, discharges of 10 or less gallons of oil, occurring above the surface of the ground onto a concrete or asphalt paved surface and not reaching ground water or surface waters of the State, do not need to be reported to the commissioner if the owner or operator complies with all of the following requirements:
- (a) The discharge is cleaned up within 24 hours of discovery.

- (b) A written log is maintained recording for each discharge the date of discovery, its source, the general location of the discharge on the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.

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NOTE: To report a leak or discharge at any time, 24 hours a day, seven (7) days a week, call 1-800-482-0777.

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- (4) The owner or operator shall maintain a log at the facility, recording the date, results, and the individual conducting the annual tests of cathodic protection and leak detection systems.
- (5) Only waste oil tanks constructed of cathodically protected steel, fiberglass or another noncorrosive material approved by the commissioner may be relined. Such tanks must be relined in accordance with section 5(D)(16) of this rule. Repairs other than relining must be conducted in accordance with section 5(D)(17).
- (6) Waste oil may not be stored in a facility of a design and construction with which it is not chemically or physically compatible.
- (7) Hazardous substances as defined in 38 M.R.S.A., subsection 1362(1), may not be added to or stored at a waste oil facility.

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NOTE: The addition of degreasers, solvents and other hazardous substances to a waste oil tank may make the waste oil a hazardous waste. Hazardous wastes must be stored, manifested, transported and disposed in accordance with department hazardous waste regulations, Chapters 850 through 857.

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- (8) All owners or operators of waste oil facilities shall provide financial responsibility coverage in accordance with the requirements of section 5(D)(18) of this rule.
- (9) Maintenance of records. Required facility records and logs must be maintained and available in accordance with section 5(D)(19) of this rule.
- (10) The owner must conduct an annual facility compliance inspection, correcting any deficiencies found in accordance with section 5(D)(20) of this rule.
- E. Closure of underground waste oil storage facilities.** Underground waste oil storage tanks and associated piping must be abandoned in accordance with section 11 of this rule.

**8. Regulation of Field Constructed Underground Oil Storage Tanks****A. Applicability**

- (1) This section applies to all underground oil storage tanks where the primary containment structure is constructed at the location of installation and is not delivered to the installation site without further assembly required.
- (2) This section applies to tanks constructed of steel, concrete, fiberglass reinforced plastic, fiberglass and other materials.

**B. Design and installation requirements for new and replacement field constructed tanks****(1) General design requirements**

- (a) Bare steel and asphalt coated steel tanks are prohibited.
- (b) Concrete, fiberglass reinforced plastic, fiberglass and riveted steel tanks are prohibited.
- (c) All new and replacement steel tanks must be cathodically protected and coated with a suitable dielectric material. The cathodic protection system must be designed by a corrosion expert to adequately protect all parts of a tank from corrosion by maintaining a negative structure to soil potential of at least 0.85 volts. Cathodic protection systems must be designed in accordance with National Association of Corrosion Engineers Standard RP 0285-2002 "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".
- (d) New and replacement steel tanks must be designed by a professional engineer in compliance with Maine's professional regulation statute, and constructed in accordance with Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks", and American Petroleum Institute Standard 650 "Welded Steel Tanks for Oil Storage".
- (e) Piping connected to field constructed tanks must be designed and constructed in accordance with the requirements of sections 5, 6, 7, 9 or 10 depending on type of facility and piping system proposed.

- (2) Leak detection. All new and replacement field constructed tanks must be provided with secondary containment and continuous interstitial space monitoring. Secondary containment using an excavation liner must be designed and installed in accordance with Appendix O.

- (3) Overfill and spill prevention equipment. New and replacement tanks must be installed with overfill and spill prevention equipment in accordance with section 5(B)(3) or section 6(B)(3) depending on facility type.
- (4) General installation requirements
  - (a) No new or replacement field constructed underground oil storage tank may be installed unless the facility has been registered in accordance with section 4 of this rule.
  - (b) New and replacement field constructed tanks shall be assembled and installed according to good engineering practices under the surveillance of a professional engineer registered in Maine or otherwise working in compliance with 32 MRSA, section 1351 et. seq. The engineer shall be responsible for supervising all phases of assembly and installation. At least 60 days prior to tank registration, design and installation plans must be submitted to the commissioner for review and approval. The plan must include, at a minimum:
    - (i) Secondary containment and leak detection installation details;
    - (ii) Overfill and spill prevention equipment installation;
    - (iii) Anchoring;
    - (iv) Excavation and backfill specifications; and
    - (v) Cathodic protection system installation.
  - (c) Installation of the cathodic protection system must be supervised by a corrosion expert.
  - (d) If a tank is replaced, all associated piping not meeting the design and installation requirements of this section must be replaced except if the piping is part of an airport hydrant piping system. If product piping attached to a field constructed tank is replaced and structural damage to the associated tank has occurred, the tank also must be replaced if not designed and installed in accordance with this section.
  - (e) Certification of proper installation. Owners of new and replacement facilities shall ensure that the project engineer certifies to the commissioner, within 30 days of completion of installation; that the facility materials, design and installation are in compliance with the requirements of this rule. This certification must be provided in writing on a form provided by the commissioner.

**C. Retrofitting requirements for existing motor fuel, marketing or distribution field constructed tanks**

- (1) Leak detection must be retrofitted at existing field constructed tanks in accordance with section 5 of this rule.
- (2) Overfill and spill prevention equipment must be retrofitted by December 1, 1993, at all existing field constructed tanks made of fiberglass, cathodically protected steel, or other noncorrosive materials approved by the commissioner, in accordance with section 5(B)(3) of this rule.

**D. Operation, maintenance, testing, and inspection requirements for new, replacement and existing tanks**

- (1) Tanks that are part of a motor fuel, marketing or distribution facility must be operated in accordance with section 5(D) of this rule, except that the requirements of sections 5(D)(1) and (2) do not apply.
- (2) Tanks that are part of a heating oil facility for consumptive use by the owner or operator must be operated in accordance with section 6(C).
- (3) Tanks that are a part of a waste oil facility must be operated in accordance with section 7(C).
- (4) Notwithstanding the above, repairs must be conducted in accordance with sections 5(D)(16) and (17), except that a repair may be designed by and conducted under the surveillance of a professional engineer in accordance with Maine's professional regulation statutes.
- (5) The owner shall conduct an annual facility compliance inspection and correct any deficiencies found in accordance with section 5(D)(20) of this rule.

**E. Closure and abandonment of underground field constructed oil storage tanks**

- (1) Tanks must be abandoned in accordance with section 11, except that owners of concrete tanks larger than 20,000 gallons capacity may be granted a variance by the commissioner from the requirement under the following conditions:
  - (a) An alternate method of closure or long term maintenance is proposed that is equally protective of the environment, public health, safety and welfare.
  - (b) Discharges of oil will be remediated to the satisfaction of the commissioner;
  - (c) Public access is controlled;

- (d) A notice of the presence of underground oil storage tanks is permanently attached to the deed of the parcel upon which the tanks are located, including at a minimum, a description of the tanks, their size, types of product stored, and their surveyed location; and
- (e) Written notice has been provided to the local fire department having jurisdiction indicating that a variance is being sought from the requirements of section 11.

The commissioner may approve, deny, or approve with conditions a variance under this paragraph.

- (2) The owner or operator of a field constructed tank shall conduct a site assessment in accordance with section 11(A) and Appendix P prior to the completion of facility closure.

**9. Regulation of Facilities for the Underground Storage of Heavy Oils****A. Applicability**

- (1) This section applies to all underground oil storage facilities intended for storing or containing heavy oil, oil that must be heated during storage, including but not limited to #5 and #6 oil.
- (2) This section applies to # 4 oil storage facilities only when the oil must be heated during storage.

**B. Design and installation requirements for new and replacement facilities.****(1) General design requirements**

- (a) Facilities must be designed in accordance with section 6(B)(1) except ~~where~~ Where a field constructed tank is proposed at a heavy oil facility, then the general design requirements for heating oil facilities under sections 6(B)(1) or 8(B) must be followed.
  - (b) All facility construction materials must be physically and chemically compatible with the product to be stored, including the temperature at which the product is to be stored. Fiberglass or plastic jacketed components may not be installed in facilities where the oil temperature will exceed 150°F.
- (2) Leak detection. New and replacement heavy oil facilities must provide leak detection in conformance with the leak detection requirements for other heating oils in section 6(B)(2) or field constructed tanks in section 8(B)(2), including secondary containment with continuous interstitial space monitoring.
  - (3) Overfill and spill prevention equipment requirements are the same as those for other heating oils under section 6(B)(3) of this rule.
  - (4) Installation requirements for new and replacement heavy oil facilities.
    - (a) An underground oil storage facility or tank may not be installed unless the facility has been registered in accordance with section 4 of this rule.
    - (b) No person may install an underground heavy oil storage facility unless that person is a properly certified Class 2 underground oil storage tank installer in accordance with 32 M.R.S.A., section 10001 et seq., and has paid the certification fee.

- (c) A certified underground oil storage tank installer may not install an underground oil storage tank if the installer has been placed on inactive status or if the installer's certification has been suspended or revoked pursuant to 32 M.R.S.A., section 10015
- (d) If a tank is replaced, all associated underground piping not meeting the design requirements of this rule must be replaced. Any replacement piping must be designed and installed in accordance with this rule. If product piping is replaced and structural damage to the tank has occurred, the associated tank also must be replaced if not constructed of fiberglass, cathodically protected steel, or other noncorrosive materials approved by the commissioner. Repairs of damaged fiberglass, cathodically protected steel, and other Commissioner approved tanks may only be made if conducted in accordance with sections 5(D)(16) or (17). Tanks that cannot be repaired must be abandoned in accordance with section 11.
- (e) New and replacement heavy oil facilities must be installed in accordance with National Fire Protection Association Code 31 and the requirements of section 6(B)(4), (5) and (6), except that the installation of copper and PVC piping is prohibited and the heating system must be electrically isolated from the cathodic protection system if the tank is steel.
- (f) New and replacement fiberglass and plastic jacketed steel tanks must be provided with continuous product temperature monitoring equipment, installed in accordance with the manufacturer's specifications.

**C. Operation, maintenance, testing and inspection requirements for new, replacement and existing heavy oil facilities**

- (1) Heavy oil facilities must be operated in accordance with the requirements for other heating oil facilities in section 6(C) of this rule.
- (2) The owner or operator of heavy oil facilities with fiberglass or plastic jacketed steel tanks or piping shall monitor representative product temperature within the tank daily to ensure it does not exceed tank and piping manufacturer's specifications or limits. Product temperature readings must be recorded, including date, temperature, and the initials of the person taking the measurements or readings. Temperature records must be maintained at the facility for 3 years and be available to department personnel and representatives or municipal officials.
- (3) Product temperature measurement equipment must be maintained in good operating condition. Such equipment must be tested and if necessary, calibrated, at least annually by a properly trained representative of the owner or operator, a certified installer or an authorized representative of the manufacturer.

- (4) Fiberglass and jacketed steel facilities may not be operated above 150°F.
- (5) The owner shall conduct an annual facility compliance inspection and correct any deficiencies found in accordance with section 5(D)(20) of this rule.

**D. Closure requirement.** Heavy oil tanks must comply with the requirements of section 11.

**10. Regulation of Pressurized Airport Aviation Fuel Hydrant Piping Systems****A. Applicability**

- (1) This section applies to all underground pressurized airport aviation fuel hydrant piping systems, including associated pressurized transmission piping, that are a part of an underground oil storage facility.
- (2) Underground tanks storing aviation fuel must comply with section 5 or 8 of these rules, as applicable.

**B. Design, construction and installation requirements for new and replacement pressurized airport hydrant piping systems****(1) General design and construction requirements**

- (a) Bare steel and asphalt coated steel piping are prohibited.
- (b) All new and replacement steel piping in contact with soil or water must be cathodically protected and coated with a suitable dielectric material. The cathodic protection system must be designed by a corrosion expert to adequately protect all parts of the piping system from corrosion by maintaining a negative structure to soil potential of at least 0.85 volts. Cathodic protection systems shall be designed in accordance with National Association of Corrosion Engineers Standard RP-0285-2002.
- (c) Piping must be designed by a professional engineer in compliance with Maine professional regulation statutes, and constructed in accordance with American National Standards Institute (ANSI) standard for "Chemical Plant and Petroleum Refinery Piping", ANSI/ASME B 31.1.

- (2) Leak detection. All new and replacement airport hydrant piping routinely containing oil must be provided with secondary containment and continuous interstitial space monitoring. Secondary containment using an excavation liner must be designed and installed in accordance with Appendix O.

**(3) General installation requirements**

- (a) No new or replacement airport hydrant piping may be installed unless the facility and piping have been registered in accordance with section 4 of this rule.
- (b) New and replacement airport hydrant piping must be installed according to good engineering practices using welded joints and under the supervision of a professional engineer registered in Maine or otherwise working in

compliance with 32 M.R.S.A., section 1351 et seq. The engineer shall be responsible for surveillance of all phases of installation. Installation plans must be submitted for department review and approval at least 60 days prior to new or replacement piping registration and must include at a minimum:

- (i) Secondary containment and leak detection installation details;
  - (ii) Excavation and backfill specifications;
  - (iii) Pipe material specifications;
  - (iv) Welding specifications; and
  - (v) Cathodic protection system installation.
- (c) Installation of the cathodic protection system must be supervised by a corrosion expert.
- (d) If airport hydrant piping is replaced, any underground oil storage tank not constructed of fiberglass, cathodically protected steel, or other commissioner approved noncorrosive materials in conformance with sections 5 or 8 of this rule must be replaced at the same time.
- (e) New and replacement piping must be installed in accordance with ANSI B31.3.
- (f) Welded joints must be radiograph inspected.
- (g) Hydrant pits must be liquid tight and must drain to an oil water separator, or other commissioner approved collection and treatment system.
- (h) Certification of installation. Owners of new and replacement facilities shall ensure that the project engineer certifies to the commissioner, within 30 days of completion of installation, that the facility materials, design and installation meet the requirements of this rule. This certification must be provided in writing on a form provided by the commissioner.

#### **C. Retrofitting requirements for existing airport hydrant piping systems**

- (1) Existing airport hydrant piping systems without secondary containment and interstitial space monitoring or another form of leak detection in compliance with section 5(B)(2) of this rule, shall retrofit or implement one of the following leak detection methods by December 1, 1991:

- (a) An annual hydrostatic test of the entire piping line conducted at 150 percent of maximum design operating pressure, or maximum transient surge pressure, whichever is greater. Test shall be conducted for a minimum of four (4) hours and otherwise in accordance with API Recommended Practice 1110, "Pressure Testing of Liquid Petroleum Pipelines".
  - (b) Continuous vapor or tracer monitoring in the unsaturated soil zone, using sufficient sampling points to detect a leak or discharge of oil from any point in the piping. Vapor monitoring must meet the requirements specified in section 5(C)(2)(c) of this rule.
  - (c) Other leak detection systems approved by the commissioner that can reliably detect a loss of at least 40 gallons per day.
- (2) Existing airport hydrant piping systems constructed of steel may retrofit corrosion protection in accordance with 38 M.R.S.A., section 563-A(1-A) as an alternative to abandonment or replacement, provided a corrosion induced leak has not occurred and the system is not located in a sensitive geological area. To be eligible for this exemption, the facility owner or operator must demonstrate to the commissioner's satisfaction that the airport hydrant piping system does not leak 40 gallons or more per day and that any leaks are not directly or indirectly due to corrosion. Cathodic protection must be designed by a corrosion expert and installed in accordance with the standards of section 10(B) above. Leak detection must be retrofitted at the same time cathodic protection is retrofitted.

**D. Operation, maintenance, testing and inspection requirements for new, replacement and existing hydrant piping systems**

- (1) Airport aviation fuel hydrant piping systems must be operated in accordance with section 5(D) of this rule, except that the requirements of 5(D)(1) and (2) do not apply; and
- (2) Repairs of new, replacement and existing piping must be in accordance with good engineering practice and under the surveillance of a Maine professional engineer. Upon completion, the repaired section must be tested for leaks and for proper operation of the cathodic protection system. A report describing the repairs made and test results must be submitted by the owner or operator to the commissioner for approval.
- (3) Annual inspection requirements. The owner shall conduct an annual facility compliance inspection and correct any deficiencies found in accordance with section 5(D)(20) of this rule.

- E. Closure and abandonment.** Closure and abandonment of airport hydrant piping systems must be in accordance with section 11 of this rule.

## 11. Regulations for Closure of Underground Oil Storage Facilities

### A. Facility closure requirements

- (1) The owner or operator of an underground oil storage facility or tank that has been or is intended to be out-of-service for a period of more than 12 months must close the facility or tank in accordance with this section unless the tank owner has received written permission from the commissioner to remain temporarily out of service in accordance with the requirements of subsection B below. Closure must include:
  - (a) Proper abandonment of tanks, piping and other facility components;
  - (b) Emptying and cleaning tanks of all liquids and accumulated sludge;
  - (c) Storage or disposal of removed tanks in accordance with this section;
  - (d) Completion of a site assessment in accordance with the requirements of Appendix P for all types of facilities or a portion thereof, except on-site consumptive use heating oil facilities (other than heavy oil facilities), and farm and residential motor fuel tanks of 1,100 gallons or less capacity and where the product is used only by the tank owner or operator; and
  - (e) Clean-up of discharges and leaks to the satisfaction of the commissioner in accordance with section 12 of this rule.

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NOTE: A site assessment and site assessment report are required as part of facility or tank closure for heavy oil tanks but not for #2, kerosene and other heating oils when stored and in the same location as they are consumed on the same premises. Only heating oils heated during storage meet the definition of a heavy oil in this rule.

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- (2) When ownership of the facility or tank is unknown, the current landowner is responsible for facility closure.

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NOTE: Maine statute (38 M.R.S.A. section 563-A) requires closure of nonconforming tanks in accordance with this rule no later than October 1, 1998.

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### B. Temporarily out of service facilities and tanks

- (1) When a facility has been or is intended to be temporarily out-of-service for a period exceeding 3 months and not exceeding 12 consecutive months, the owner or operator shall:

- (a) Continue operation and maintenance of the corrosion protection system in accordance with the applicable requirements of this rule;
  - (b) Continue leak detection in accordance with the applicable requirements of this rule, unless all all liquids including product and water is are emptied from the tank with no more than one (1) inch of residual left;
  - (c) Leave vent lines open and functioning;
  - (d) Cap and secure all other lines, pumps, man ways and ancillary equipment;
  - (e) Submit an annual compliance inspection report in accordance with section 5(D)(20) of this rule and 38 M.R.S.A., subsection 563(9); and
  - (f) Report and investigate evidence of a leak or discharge in accordance with section 12 of this rule.
- (2) A tank owner may apply in writing for approval of the commissioner to allow a facility to remain temporarily out-of-service for more than 12 consecutive months, if done so before the initial 12 months out of service expires, and when:
- (a) The owner can provide documentation that the facility is not leaking;
  - (b) The requirements of paragraph (1) above are met; and
  - (c) The facility is constructed in compliance with the applicable requirements of this rule.

Commissioner approval for a facility to remain temporarily out of service for more than 12 months must be in writing.

- (3) The owner of a temporarily out-of-service facility, regardless of the length of time, may bring the facility back into service if in compliance with the requirements of this rule, and the facility passes a precision test prior to returning to service. The facility's registration must also be amended in accordance with section 4 of this rule.

NOTE: Being in compliance with all the applicable requirements of this rule is a prerequisite to qualifying to bring a temporary out of service facility back into service under paragraph (3) above. This includes having obtained commissioner approval to remain temporarily out of service for more than 12 months and the other requirements of B (2) of this section of the rule.

**C. Abandonment by removal**

- (1) Tanks, piping or facilities that have been out of service for 12 months must be removed within 60 days, unless a written request has been made to remain out of service for more than 12 months under section 11(B) (2) above and has been approved or not been acted upon or unless written permission has been granted has been made and is subsequently approved by the commissioner under section 11(B).
- (2) Removal of tanks and facilities must be conducted in the sequence required in Appendix J to the satisfaction of the commissioner. For facilities listed in section 11(A)(1)(d), a site assessment must be conducted at the time of removal in accordance with Appendix P.
- (3) As required under 38 M.R.S.A., section 566-A(5), removal of Class I liquid tanks or facilities, as of September 28, 1991, must be conducted under the direct, on-site supervision of an underground oil storage tank installer or remover certified pursuant to 32 M.R.S.A., section 10001 et seq., or fire fighting personnel certified by the commissioner.

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NOTE: The above requirement applies to gasoline facilities and possibly other liquid petroleum products such as aviation fuel. Fire prevention requirements of these rules may also be enforced by State and local fire officials.

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- (4) If underground oil storage tanks that have been removed are stored, the following provisions apply:
  - (a) Areas chosen for storage may not be accessible to the general public.
  - (b) Inverted tanks may be stored with unplugged openings. While being transported, openings are to be tightly plugged, screwed plugs must be used and one plug must have an 1/8 inch vent hole to prevent the tank from being subjected to an excessive pressure differential caused by extreme temperature changes.
  - (c) All stored underground oil storage tanks must be labeled with the warning noted in paragraph (5)(c) below.
  - (d) Any scale or sludge released by the tank prior to and during storage must be disposed of in accordance with Chapter 851 of department Hazardous Waste Management Rules.
- (5) If underground oil storage tanks that have been removed are sold or reused, the following provisions apply:

- (a) Bare steel and asphalt coated steel tanks shall not be re-installed for use as an underground oil storage facility;
- (b) Fiberglass and cathodically protected tanks or piping may be re-installed, if the tank owner has supplied the commissioner with satisfactory documentation that the manufacturer will warranty the facility for a period of at least 10 years for internal and external corrosion and structural failure, after which the tanks or piping must be properly abandoned pursuant to this section. A written statement attesting to the validity of the warranty, signed by the tank manufacturer, and provided to the commissioner constitutes the only proof of warranty coverage.
- (c) All transactions must be accompanied by a bill of sale indicating the former use of the tank. The bill of sale must contain the following warning:

Tank Has Contained Leaded Gasoline or Flammable Liquid  
(use applicable designation)  
Not Gas-Free  
Not Suitable for Food or Drinking Water

- (d) The tank must be clearly marked with the notice stated in paragraph (c) above, in legible letters not less than one (1) inch high, regardless of the condition of the tank.
- (e) Abandoned underground oil storage tanks are prohibited from use for above ground storage of oil, except where approved by the Maine State Fire Marshal or where a Maine professional registered engineer, or other person meeting the requirements of Maine professional regulation statutes and rules governing professional engineers practicing in Maine, certifies that the tank meets all applicable specifications and requirements in UL 142 and NFPA 30.

#### **D. Abandonment by filling in place**

- (1) Abandoned facilities and tanks must be removed, except where the owner can demonstrate to the commissioner that removal is not physically possible or practicable because the tank or other component of the facility to be removed is:
  - (a) Located beneath a building or other permanent structure that cannot be practically replaced;
  - (b) Of a size and type of construction that it cannot be removed;
  - (c) Inaccessible to heavy equipment necessary for removal; or

- (d) Positioned in such a manner that removal would endanger the structural integrity of nearby tanks.
- (2) A facility or tank owner may apply to the commissioner for a variance to abandon a facility or tank in place rather than abandon the tank or facility by removal. The variance may be granted if the commissioner finds that:
  - (a) Abandonment by removal is not possible or practicable due to circumstances other than those listed in paragraph 1 above; and
  - (b) The granting of a variance shall not pose a threat to a private or public drinking water supply or the quality of ground water, and is consistent with the intent of this rule.
- (3) All facilities to be abandoned in place shall do so by following the procedures outlined in Appendix K in sequence. For facilities listed in section 11(A)(1)(d), a site assessment must be conducted at the time of abandonment in accordance with Appendix P of this rule.

#### **E. Notification requirements**

- (1) The owner or operator of a facility or tank, which is to be closed or abandoned, shall notify the commissioner and the local fire department having jurisdiction. This notice must be in writing and received by the commissioner at least 30 days prior to abandonment, except that when ownership of the facility or tank is unknown, the current property owner is responsible for compliance with the requirements of this section. This notice must include:
  - (a) The name, mailing address, and telephone number of the owner;
  - (b) The mailing address and location of the facility;
  - (c) The size(s) of tank(s) to be abandoned or taken out-of-service;
  - (d) The type(s) of product(s) most recently stored in each tank;
  - (e) The registration number of the facility and tank(s) if registered under this rule;
  - (f) If the tank has contained a Class I liquid, the inverting procedure and, if applicable, the cleaning location;
  - (g) If the tank last contained a Class I liquid or contained a Class I liquid in the 12 months prior to closure, the name and signature of the Maine

certified tank installer, gasoline tank remover or fire official supervising the facility closure;

- (h) If abandonment in place is planned, the criteria used for justifying abandonment in place, as listed in section 11(D)(1) above;
  - (i) The approximate age of the tank, if known; and
  - (j) The date upon which the facility or tank is to be removed or when a variance has been granted pursuant to section 11(C) of this rule, the date on which the tank or facility will be properly abandoned on site.
- (2) The tank owner shall keep a permanent record of the tank location, the date of abandonment, and the method of conditioning the tank for abandonment.
- (3) The tank owner is responsible for attaching, to the deed of the property on which the tank is located, a notice that an underground oil storage tank has been abandoned in place pursuant to section 11(C). The deed notation must be executed within 30 days of completion of the abandonment.

## **12. Discharge and Leak Investigation, Response and Corrective Action Requirements**

### **A. General requirements**

- (1) In accordance with 38 M.R.S.A. section 568, any facility owner or operator or other responsible party, as defined in 38 M.R.S.A. section 562-A(17), when a leak, spill or other prohibited discharge of oil occurs, shall immediately undertake to remove that discharge to the satisfaction of the commissioner, and in accordance with the requirements of this section. In determining the extent of a corrective action, the commissioner and the commissioner's staff shall consider the potential for human exposure and for adverse effects on public safety, health and welfare as well as the environment.
- (2) Any evidence of a possible leak or discharge of oil as defined in section 5(D)(11) of this rule, any spill or overfill, or any other discharge of oil must be reported to the commissioner within 24 hours of discovery.  
Notwithstanding the above, discharges of 10 or less gallons of oil that occur on the facility premises and above the surface of the ground onto a concrete or asphalt paved surface, and that do not reach ground water or surface waters of the State, need not be reported to the commissioner if the owner or operator complies with all of the following requirements:
  - (a) The discharge is cleaned up within 24 hours of discovery.
  - (b) A written log is maintained at the facility or the owner's place of business in Maine recording for each discharge, the date of discovery, its source, the general location of the discharge at the facility, the date and method of cleanup, and the signature of the facility owner or operator certifying the accuracy of the log.
  - (c) The log is readily must be made available upon request within 24 hours for inspection by department personnel, authorized agents of the commissioner, and municipal officials.

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NOTE: Discharges of oil may be reported by calling the department's toll free telephone number, 1-800-482-0777.

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- (3) Any person who causes, or is responsible for, a discharge to ground water in violation of 38 M.R.S.A. section 543, is not subject to any fines or penalties for violation of section 543 for the discharge if that person promptly reports and removes that discharge in accordance with this rule as well as other rules or orders of the commissioner and the board.

- (4) All hydrogeological investigation and corrective action plans required under this section must be certified and stamped by a Maine certified geologist, a registered Maine professional engineer, or a geologist or engineer otherwise in compliance with the Maine professional regulation statutes for geologists or engineers. Geological and hydrogeological interpretations must be certified and stamped by a geologist. Contaminated soil and ground water treatment system design plans must be stamped by an engineer. Implementation of corrective actions must be supervised by a Maine certified geologist, a Maine registered professional engineer, or an engineer or geologist otherwise working in compliance with Maine's professional regulation statutes. Individuals providing the above professional services should be knowledgeable in underground oil storage facility investigation and remediation.
- (5) Any investigation of evidence of a possible leak or a discharge, and any removal or remediation of a discharge, that involves excavation, removal or replacement of soil material or a concrete pad, or the use of in situ techniques, above, under, or within 10 feet of a tank or piping, must be attended by an underground oil storage tank installer with the appropriate class of certification under 32 M.R.S.A., section 10001 et seq.. In order to protect the structural integrity of the facility, to prevent further discharges, and to protect public safety and the environment, the certified installer shall supervise and be present at all times when work described above is being performed.
- (56) Leaks and discharges of oil shall be investigated and corrected using techniques that are cost-effective, reliable and technically feasible
- (67) Upon determination that an oil discharge has occurred at a facility, that facility may resume partial or full operation while corrective action is taken unless the commissioner determines that a return to operation would interfere with investigation and remediation efforts, and would therefore result in a threat to public health and safety and the environment. No excavation, drilling or soil removal may be undertaken on the facility premises within five (5) feet of any pressurized Class 1 liquid (e.g. all gasolines) product lines until such lines have been drained of product. In accordance with NFPA 30 and 30-A, excavation, drilling, or other activities that may act as a source of ignition of flammable vapors at a Class 1 liquid dispensing facility may not be undertaken within 20 feet of a fueling dispenser, unless the electrical power supply to the dispenser has first been turned off and all fueling operations from that dispenser have ceased.

NOTE: Before undertaking excavation at a facility that will remain in operation, the owner or operator should notify the municipal fire chief in the event a local ordinance applies and a permit is required under NFPA-30 (7.9).

**B. Leak investigation and confirmation requirements**

- (1) The facility owner or operator, or other responsible party shall immediately investigate and confirm all suspected leaks, spills or other discharges of oil to the commissioner's satisfaction within 20 business days of discovery, or another reasonable time period approved by the commissioner, using the following steps or another procedure approved by the commissioner:
  - (a) **Leak detection check.** If the facility has leak detection in accordance with this rule and it indicates a possible leak, a check for failures of the leak detection system may be conducted prior to precision testing if the check is concluded within 3 business days of the initial discovery of evidence of a possible leak or discharge. All components of the leak detection system for tanks and piping must be checked for proper operation, recalibrated if an automated or electronic system, and monitored in accordance with the requirements of this rule and if applicable, the manufacturer's instructions. Monitoring must be conducted for 5 consecutive days. For manual leak detection systems, monitoring must be conducted daily. Records of the findings of the leak detection check and monitoring must be provided to the commissioner. If leak detection monitoring results are conclusive and do not indicate a leak, further investigation is not needed, unless there is other environmental contamination or physical evidence indicating a leak or discharge of oil. If the leak detection results indicate a leak, are inconclusive or the facility does not have leak detection meeting the requirements of this rule, the owner, operator or other responsible party shall conduct a precision test of the facility in accordance with subparagraph b. If leak detection indicates a leak, the owner, operator or other responsible party shall abandon, repair or replace facility components in accordance with appropriate sections of this rule. In addition the owner or operator of a motor fuel facility shall also comply with the testing and replacement procedures outlined in paragraph (d) below.

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**NOTE:** Performing an additional statistical inventory analysis is not an acceptable option under the leak detection check requirements because of the delay to collect the 30 to 60 days of daily product inventory data required by this method.

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- (b) **Precision test.** When a possible leak is not attributed to a failure of the leak detection system under subparagraph (a) the owner, operator or other responsible party shall have a precision test conducted of the facility to determine whether and where a leak exists. This test shall be conducted by an independent third party. If an initial precision test is either inconclusive or indicates a failure, the owner or operator may recheck the results by re-testing within two weeks of receipt of the initial test results.

A copy of all precision test results must be submitted to the commissioner by the facility owner and the tester.

- (i) If precision testing indicates a leak (2 test failures or a single uncontested test failure), the owner, operator or other responsible party shall abandon, repair or replace facility components in accordance with appropriate sections of this rule and initiate a site assessment in accordance with paragraph 1(c) below and undertake corrective actions as specified in subsection C below. In addition, the owner or operator of a motor fuel facility shall also comply with the replacement procedures outlined below in paragraph (d) of this section.
  - (ii) If results from a commissioner-approved and properly conducted precision test of the facility conclusively indicates that a leak does not exist, and if no environmental contamination or other physical evidence is the basis for suspecting a leak or discharge, further investigation is not required. The commissioner may, however, require additional precision testing or an in-situ site assessment in accordance with paragraph (c) below for environmental contamination by oil if initial precision tests are inconclusive or improperly conducted.
  - (iii) The facility owner, operator or other responsible party shall conduct a site assessment as described below in sub-paragraph (c) of this section if precision test results do not indicate a leak exists but evidence of environmental contamination or other physical evidence is the basis for suspecting a leak.
- (c) Site assessment.
- (i) The objectives of the site assessment are as follows:
    - (a) Determine the presence or absence of a leak or oil discharge where contamination is most likely to be present on the facility site;
    - (b) Identify the presence of free product and soils contaminated above the notification levels in Appendix P of this rule;
    - (c) Determine the degree of a threat to ground water quality; and
    - (d) Consider the nature of the oils stored at a facility, the cause for suspecting a leak or discharge, the type of backfill and soils, the depth of ground water, the depth of bedrock, and other factors appropriate for identifying the presence and source of a leak or other discharge.

- (ii) The site assessment must be conducted in accordance with procedures outlined in Appendix P of this rule. To verify the presence or absence of a leak or oil discharge at an operating facility in follow-up to the requirements of paragraphs (b)(ii) or (iii) above, in-situ hydrogeological investigation procedures outlined in paragraph 7 of Appendix P must be followed.
- (iii) If site assessment results for the excavation zone and other areas of the facility site indicate that a leak, spill or other discharge of oil has occurred, the owner or operator shall properly abandon, repair or replace facility components and begin corrective actions in accordance with subsection C below.
- (iv) If the site assessment results for the excavation zone and other areas of the facility site do not indicate a leak, spill or other discharge of oil has occurred, further investigation is not required.
- (d) Within 30 working days of discovery of evidence of a possible leak or another time period approved by the commissioner, the owner, operator or other responsible party shall submit a report on the steps taken and the findings of leak investigation and confirmation efforts. The report must include the name, address, and telephone number of the person to contact for more information, and a site assessment report meeting the requirements of Appendix P except that the reporting deadline is as specified above in this subparagraph.

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NOTE: 38 M.R.S.A., section 568(6), allows for reimbursement by the department of documented removal costs incurred by a tank owner or operator where a tank or facility was required by the commissioner to be removed or closed upon evidence of a leak or discharge, but later determined by a site assessment or hydrogeological investigation not to be a source of a leak or oil discharge. The facility owner or operator under these circumstances also may apply for economic damages such as loss of income through the 3rd party damage claim process outlined in 38 M.R.S.A., section 569-A.

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### **C. Minimum corrective action requirements**

#### **(1) Initial response and abatement measures**

- (a) Identify and mitigate fire, explosion and vapor hazards to the satisfaction of the commissioner and the local public safety agency having jurisdiction within 24 hours of discovery of a leak or discharge or another time period approved by the commissioner.

- (b) Take immediate action to prevent any further discharge of oil from the facility to the environment within 24 hours of discovery of leak or discharge, or another time period approved by the commissioner. This includes ceasing use and removing from those tanks and associated piping suspected or tested to be leaking as much oil as necessary to entirely stop the discharge. All tanks and piping shall be abandoned in accordance with section 11.
- (c) Remove the tanks and associated piping as soon as possible in accordance with section 11 of this rule except that compliance with the waiting period between notification and abandonment is hereby waived.
- (d) Prevent further migration of oil into surrounding soils and ground water and surface water, including the removal of any free product in the vicinity of the tanks and piping or other source of leak or discharge. Recovery of free product shall be initiated immediately upon discovery and followed by submission of a free product abatement plan, meeting the requirements of paragraph 2 of this subsection, minimum corrective actions.
- (e) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that has migrated from the excavation zone and entered into structures, sewers and utility conduits.
- (f) Soil remediation. Remediate all oil saturated soils and all soils contaminated above an action level established by the commissioner on a case by case basis, and measured by laboratory analyses and using the field headspace vapor measurement technique described in Appendix Q or another field analytical technique at least as accurate and sensitive approved by the commissioner. Prior to the filling of any tank or piping excavation, an adequate number of soil samples must be collected for laboratory analysis to determine whether additional soil remediation is required by the commissioner. A minimum of 2 such soil samples must be collected at a minimum from soils to be analyzed by the field headspace technique and to bracket the range of hydrocarbon concentrations found in the field, and analyzed in a laboratory. Acceptable laboratory methods and performance standards to be used to analyze soil samples are found in Appendix S. In cases involving low risks of public exposure or of damage to important ground water resources, the commissioner may approve an exception to the soil sample testing requirements above. To expedite remediation decisions in such cases, the commissioner may rely solely on approved field analytical methods and test data in making soil remediation decisions without laboratory confirmation analyses.
- (g) Soil treatment. The method and location of contaminated soil treatment or processing (in-situ or above ground) must be approved by the

commissioner and, if to be treated off the facility site, must comply with applicable regulations administered by the department.

- (h) **Soil disposal.** Oil contaminated soils may be disposed at a Maine landfill that is specifically licensed by or otherwise has been approved by the commissioner or department for such disposal or treatment. This paragraph does not preclude disposal at a properly licensed out of state disposal or treatment facility.
- (i) **Sampling water supply wells.** The closest water supply wells to the facility, private or public, located at or surrounding the facility in all directions and within 1000 feet of the facility must be sampled and analyzed for gasoline, heating oil, diesel fuel hydrocarbons, benzene or MTBE as required by the commissioner. When wells are found contaminated, sampling must continue to the next furthest well(s) in the same general direction from the facility until it is certain all water supplies contaminated by a leak or discharge are identified. The commissioner may require other water supplies suspected to be contaminated also to be sampled as well as additional chemical analyses, as site conditions warrant. The owners of all wells sampled shall be provided with a copy and explanation of the results within seven days. If a public drinking water supply is found to be contaminated, the Bureau of Health in the Maine Department of Human Services must be notified within 24 hours of discovery. Water samples must be analyzed in accordance with the requirements of Appendix S.
- (j) **Treatment of contaminated private water supply wells.** Owners of private water supplies found to be contaminated shall be offered and provided with point-of-entry (POE) water treatment within 15 days of the discovery of contamination. Such treatment shall reliably reduce the level of contamination below primary drinking water standards and Maine Bureau of Health maximum exposure guidelines. For water supplies contaminated with gasoline or heating oil below 1 ppm or MTBE below 100 ppb, two granulated activated charcoal filters of adequate volume, installed in series may be used. Contamination above these levels requires treatment by aeration. Other point-of-entry treatment systems may be used when demonstrated to be effective and reliable in reducing oil contamination and approved by the commissioner. If treatment does not reduce contamination levels below required health standards, the commissioner may require different or additional interim remedial measures to avoid human exposure to oil contaminants or other contaminants present due to the oil contamination.
- (k) **Treatment of contaminated public water supplies.** The commissioner may require contaminated public water supply wells to be provided by the owner, operator or other responsible party with treatment adequate to

reduce oil concentrations and other contaminant concentrations below primary drinking water standards and Maine Bureau of Health maximum exposure guidelines. The treatment system must be designed by a professional engineer registered in Maine or working in conformance with Maine professional regulation statutes and rules, and be approved by the commissioner, the Maine Bureau of Health and the public water supply owner.

(l) Water supply monitoring requirements

- (i) Affected water supplies must be monitored by sampling once every 3 months before, between and after treatment devices for as long as the system is operating. Water shall be analyzed for total gasoline and benzene, total heating oil, diesel oil or other applicable parameters as required by the commissioner. Water supply sampling and analyses must be conducted in accordance with Appendix S.
- (ii) Water supplies found to be contaminated with oil below established health standards must be monitored every 3 months for total gasoline hydrocarbons and benzene, total heating oil hydrocarbons or other applicable parameters required by the commissioner. Water supplies located in close proximity to and adjoining to contaminated ones must, along with other wells deemed by the commissioner to be at significant risk of contamination, also be monitored in accordance with the above requirements.
- (iii) Monitoring of contaminated water supplies and supplies deemed at significant risk of contamination must continue until either use of the supply is discontinued, four (4) consecutive quarterly monitoring results do not detect contamination by oil or its components, or monitoring is suspended by the commissioner because in his judgment it is no longer needed.
- (iv) Monitoring results must be provided to the commissioner and the water supply owner within 7 days of receipt.
- (m) Point-of-entry treatment devices must be maintained in proper operating condition until completion to commissioner satisfaction of a potable replacement drinking water supply or the completion of long-term correction actions and settlement of third party damage claims.
- (n) Within 30 days after confirmation of a leak or other discharge of oil, the owner, operator or other responsible party shall submit a written report to the commissioner summarizing the initial response and abatement measures taken, their effectiveness, any resulting data or laboratory analyses, documentation that affected parties and the Maine Bureau of

Health have been properly notified and the need for hydrogeological characterization and investigation of the extent of contamination, or for additional abatement measures.

- (o) Upon consideration of the level and type of contamination, the sensitivity of the geological setting of the facility, the presence of possible receptors, and proximity to important ground water or surface water resources; the commissioner may require a hydrogeological investigation in accordance with paragraph 4 below as well as additional initial abatement measures.
- (2) Free product recovery. Free oil product must be recovered or removed to the satisfaction of the commissioner at all sites where found. A free product abatement plan shall be submitted for the review and prior approval of the commissioner. The free product abatement plan must be submitted within 30 days of discovering free product or another time period approved by the commissioner. Such a plan must include, at a minimum:
- (a) Methods for product control. Control of free product migration and the removal or recovery of all free product that is technically feasible shall be the minimum objectives of any abatement plan. Free product removal or recovery must be conducted in a manner that minimizes the spread of contamination into previously uncontaminated zones using techniques appropriate to the hydrogeological conditions of the site, and that properly treats, discharges or disposes of recovery byproducts.
  - (b) Methods to handle any flammable products in a safe and competent manner to prevent fires or explosions.
  - (c) The name of the person(s) responsible for implementing free product removal or recovery procedures.
  - (d) The estimated quantity, type and thickness of free product observed or measured in wells, bore holes and excavations.
  - (e) The location of any discharge of dissolved phase oil contaminated water. Any discharge of free oil product or a free product and water emulsion is prohibited.
  - (f) The type of treatment to be applied to and the effluent quality expected from any discharge.
  - (g) The disposition and handling of recovered free product.
  - (h) If removal is to include soil gas venting, the quality and quantity of expected air emissions.

(3) Hydrogeological investigation of the extent of contamination.

- (a) The objectives of the initial hydrogeological investigation are to characterize the geology of the facility and the surrounding area, to determine the concentration and extent of soil and ground water contamination, to determine the direction and rate of contamination movement, to identify what resources and receptors are at significant risk of contamination and to determine the need for and the objectives of long-term corrective actions. The initial hydrogeological investigation study must cover the facility site and those areas known or suspected to be contaminated by oil.
- (b) The following existing data, where available, must be compiled and reviewed:
  - (i) Soils maps;
  - (ii) Aerial photographs;
  - (iii) Well logs for all contaminated wells and wells on properties abutting a parcel with a contaminated well and all other wells within 500 feet of the facility;
  - (iv) A property tax map or other base map at a scale of 1"=500' or less showing existing structures, property ownership, surrounding land uses, rights-of-way, roads, existing underground utilities and public and private water supply wells that are contaminated, on a land parcel abutting a parcel with a contaminated well or within 1000 feet of the facility;
  - (v) Surface water bodies, including intermittent streams, wetlands and flood plains;
  - (vi) Regional bedrock geology; and
  - (vii) Surficial geology.
- (c) Fracture trace analysis. Conduct a fracture trace analysis if contamination of ground water in the bedrock is documented or likely. The analysis must include measurement of fractures observed in bedrock outcrops and on aerial photographs, on a site plan, a U.S. Geological Survey quadrangle, a rose diagram or a polar plot. The relationship between observed fracture patterns to well yields and contamination movement must be determined. A summary and analysis of available published studies of bedrock fractures relevant to the investigation site also must be provided.

- (d) Develop ground water and contamination contour maps of the facility using existing wells, where available and at least 4 ground water monitoring wells located in the surrounding impacted area, one of which must be located upgradient (dry wells do not count toward the 4-well minimum). The maps must include the surveyed location of ground water monitoring wells, ground water elevations (measured to the nearest one hundredth of a foot), ground water contours, contamination levels and contours, current and past locations of tanks and piping, location of subsurface waste disposal system and any dry wells, and the locations of sewer and any other underground utility lines.
- (e) The following minimum data must be collected and logged during the boring of ground water monitoring wells:
  - (i) Soil and subsoil conditions and types (described using the unified soil classification system);
  - (ii) Presence and depth of confining strata;
  - (iii) Presence, depth of free oil products;
  - (iv) Depth of water table;
  - (v) Presence and depth of bedrock; and
  - (vi) Continuous split spoon logging screening for oil contaminated soils above the water table with a flame or photo ionization field sampling instrument, using the methodology outlined in Appendix Q or another technique of comparable precision and reliability approved by the commissioner.
- (f) Water quality sampling and analyses requirements are:
  - (i) Each well must be properly developed and allowed to stabilize prior to sampling;
  - (ii) Samples must be collected in accordance with the department "Ground Water Sampling Manual for Underground Tank Sites" or by another collection method approved by the commissioner;
  - (iii) Samples must be analyzed in a laboratory at a minimum for gasoline or diesel range organics, as appropriate, or by another comprehensive hydrocarbon laboratory method approved by the commissioner;
  - (iv) Whenever gasoline contamination is suspected, sample analyses must include methyl tertiary butyl ether (MTBE) and benzene;

- (v) Other chemical analyses may be required by the commissioner where needed to assess the extent of and the public health risk of contamination;
  - (vi) Laboratory analysis of water samples must be conducted in accordance with the requirements of Appendix S; and
  - (vii) At least 2 complete rounds of sampling are required from all monitoring points, including surrounding water supply wells, at least one month apart.
- (g) Nearby surface water bodies likely to be affected must be sampled for oil contamination.
- (h) Within 90 days of a commissioner request to perform a hydrogeological investigation, or another time period approved by the commissioner, the owner, operator or other responsible parties shall submit a report of the findings and conclusions of the initial hydrogeological investigation to the commissioner for review and approval. The following data, results and conclusions must be included in the report:
- (i) Data and sample collection and analysis methods used;
  - (ii) Hydrogeological site description addressing the general geological setting of the site, potential and present contamination hazards, bedrock and overburden interconnection, extent and location of ground water and soil contamination, the direction and rate of contamination migration, ground water and surface water resources at risk of contamination, identification of water supply wells contaminated or at imminent risk of contamination, and identification of receptors at risk of hydrocarbon vapor problems;
  - (iii) Soil, ground water and surface water quality data, including all field and laboratory data, and the relationship of measured contaminant levels to State of Maine and federal allowable contaminant standards or guidelines;
  - (iv) Minimum data and findings to be presented in tables, figures or appendices:
    - (a) Detailed site/locus map;
    - (b) Sufficient geologic maps or cross sections to illustrate the site's geological setting;

- (c) Ground water contour map;
  - (d) Map of bedrock fractures and lineaments;
  - (e) Geophysical survey map, if any;
  - (f) Table or map showing water quality sampling results;
  - (g) Soil sampling results;
  - (h) Boring logs and well installation details; and
  - (i) All testing laboratory reports and results.
- (v) Recommendations addressing the need and objectives for additional hydrogeological investigation or monitoring, and the need for additional immediate abatement measures and/or corrective actions for long-term remediation of oil discharges;
- (vi) Upon review of the initial hydrogeological investigation study report, the commissioner may require the owner, operator or other responsible party to undertake further investigations to determine the need and feasibility of long-term corrective actions, or the commissioner may require responsible parties to undertake long-term corrective action in accordance with paragraph D below of this section.

**D.** Long-term corrective actions may be required to provide replacement potable drinking water, to mitigate the risk of contamination to private and public drinking water supplies or important ground water or surface water resources, to prevent human exposure to petroleum vapors, to control fire and explosion hazards, to protect or restore important biological resources, and to otherwise protect the public health, safety and the environment. Because of the site specific needs and objectives of long-term corrective actions, the owner, operator or other responsible party may be required by the commissioner to submit for approval a long-term corrective action plan. The schedule for submitting, the format, additional information needs, the overall contents and the objectives of the long-term corrective action plan will be determined by the commissioner on a site by site basis.

**E. Public information and participation requirements**

- (1) At the time of submission to the commissioner, copies of the leak investigation and confirmation report, the initial response and abatement report, the free product abatement plan, the initial hydrogeological investigation report and the long-term corrective action plan must be sent by certified mail by the owner, operator or other responsible party to the chief

municipal officer with jurisdiction or the county commissioners if in an unorganized township, who are responsible for ensuring these documents are available to the public for inspection at the municipal or county offices. The leak investigation and confirmation report and free product abatement plan also must be provided to the local fire chief with jurisdiction.

- (2) The owner, operator or other responsible party shall provide a copy of the leak investigation and confirmation report by certified mail to owners of land parcels abutting the facility and to holders of an easement or a right-of-way for an underground utility conduit on the facility or along a public or private road abutting the facility.
  - (3) Prior to approving a long-term corrective action plan, the commissioner may hold a public meeting to inform and to solicit comments from impacted residents, abutting landowners and local officials. The commissioner shall provide written notice 7 days in advance of such a meeting to affected parties, including at a minimum impacted residents and the chief municipal officer, and the responsible parties, if known. When a long-term corrective action effort is to be terminated prior to meeting the objectives of the long-term corrective action plan, the commissioner shall provide written notice by certified mail to the chief municipal officer with jurisdiction or the county commissioners if in an unorganized township, and to residents who have suffered oil contamination.
- F. When technically feasible and cost effective, the commissioner may require ground water sample location and quality data to be submitted in an electronic form compatible with the Maine Geographic Information System and Ground Water Database. The format shall be provided by the commissioner.
- G. Nothing in this section limits department authority or discretion under 38 M.R.S.A. section 568 to order or undertake immediate remedial or corrective action at sites where evidence of contamination by oil is present.

**13. Severability.** If any provision of this rule is declared invalid or ineffective by a court decision, the decision does not invalidate any other provision of this rule.